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| APPLICATION NO.                  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------------|-------------|----------------------|---------------------|------------------|
| 10/734,682                       | 12/12/2003  | William Bedingham    | 59072US002          | 1223             |
| 32692                            | 7590        | 09/05/2007           | EXAMINER            |                  |
| 3M INNOVATIVE PROPERTIES COMPANY |             |                      | NAGPAUL, JYOTI      |                  |
| PO BOX 33427                     |             |                      | ART UNIT            | PAPER NUMBER     |
| ST. PAUL, MN 55133-3427          |             |                      | 1743                |                  |
|                                  |             |                      | MAIL DATE           | DELIVERY MODE    |
|                                  |             |                      | 09/05/2007          | PAPER            |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

|                              |                 |                  |
|------------------------------|-----------------|------------------|
| <b>Office Action Summary</b> | Application No. | Applicant(s)     |
|                              | 10/734,682      | BEDINGHAM ET AL. |
|                              | Examiner        | Art Unit         |
|                              | Jyoti Nagpaul   | 1743             |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 11-29 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-10, drawn to a sample mixing structure, classified in class 422, subclass 100.
  - II. Claims 11-20, drawn to a sample mixing structure comprising a first mixing chamber and a second mixing chamber, classified in class 422, subclass 99.
  - III. Claims 21-28, drawn to a method of mixing fluids, classified in class 436, subclass 180.
  - IV. Claim 29, drawn to a method of mixing fluids, classified in class 436, subclass 45.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are directed to related sample processing device. The related inventions are distinct if the (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed Group I does not require the particulars of Group II such as a first mixing chamber and a second mixing chamber. The inventions, Group I and Group II, as claimed have a materially different design, mode of operation, function or effect.

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3. Inventions I and III are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be practiced with a different method. For example, the method as claimed does not require a process chamber comprising a delivery port on a proximal side of the process chamber and when the exit port of the process chamber is open, rotation of the sample processing device about the axis of rotation moves the sample material out of the process chamber and the mixing chamber.

4. Inventions I and IV are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be practiced with a different method. For example, the method as claimed requires a process chamber comprising a delivery port on a proximal side of the process chamber.

5. Inventions II and III are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be practiced with a different method. For

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example, the apparatus as claimed requires a first mixing chamber and a second mixing chamber.

6. Inventions II and IV are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be practiced with a different method. For example, the apparatus as claimed requires a first mixing chamber and a second mixing chamber.

7. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

8. During a telephone conversation with Kevin Raasch on August 29, 2007 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-10. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-29 are withdrawn from further consideration by the examiner, 37 CFR 1:142(b), as being drawn to a non-elected invention.

9. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

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remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Drawings***

10. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the ***exit port*** as recited in Claims 1-2, 4 and 10 and ***a first major side a second major side*** of the sample processing deviceas recited in Claims 6 and 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. **Claims 1-7 and 9** are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson (US 3873217).

Anderson teaches a sample mixing apparatus. The apparatus comprises a process chamber (3) comprising a delivery port (9) on a proximal side of the process chamber (3) and an exit port (not labeled see figure 1) on a distal side of the process chamber (3). The apparatus further comprises a mixing chamber (2) comprising a mixing port (12), wherein the mixing port (12) is located on the distal side of the process chamber (3). The rotation of the sample processing device as described in Anderson moves at least a portion of sample material in the processing chamber into the mixing chamber (2) when the mixing port is open. It appears in Figure 1, the proximal side of the process chamber (3) is located closer to the axis of rotation than the distal side of the process chamber (3). In Anderson, when the exit port (not labeled see figure 1) of the process chamber is open, rotation of the sample processing device about the axis of rotation moves the sample material out of the process chamber. (See Col. 2, Lines 40-48) Additionally Examiner notes, the above limitations are functional and are of no patentable significance in apparatus claims. The device of Anderson meets all the claimed structural elements and thus is capable of performing the functional limitations.

As shown in Figure 1, a radial axis extends through the proximal side and the distal side of the process chamber (3). As shown in Figure 1, the radial axis intersects the axis of rotation, and wherein the radial axis extends through the delivery port (9) and the exit port (not labeled see figure 1) of the process chamber (3). Further, at least a portion of the mixing chamber (2) is located in a tangential direction off to a side of the process chamber (3) relative to the radial axis. (See Figure 1) It appears in Figure 1, the process chamber (1) is located between a first major side (not labeled see figure 1) and a second major side (not labeled see figure 1) of the sample processing device. Additionally, at least a portion of mixing chamber (2) is located between the process chamber (3) and the second major side (not labeled see figure 1).

#### ***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson in view of Kellogg (US 6302134).

Refer above for the teachings of Anderson.

Anderson fails to teach wherein the mixing port comprises a valve.

Kellogg teaches microfluidic structure on a platform that uses centrifugal rotors for the movement of fluid. The microfluidic structure comprises a sacrificial valve (314) that is placed at the junction of a channel (305) that releases to permit fluid flow through a channel. (See Col 16, Lines 40-55)

It would have been obvious to one having ordinary skill in the art to provide a valve to the mixing port in the system of Anderson to achieve the predictable results of preventing premature mixing and control fluid flow through the device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jyoti Nagpaul whose telephone number is 571-272-1273. The examiner can normally be reached on Monday thru Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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